

REMARKS

Reconsideration of the application is requested in view of the above amendments and the following remarks. Claims 4, 5, 12, 18, 19 and 24 have been amended. The amendments are supported at least by the description at page 4, lines 12 - 13 and page 5, lines 6 – 7 of the present specification. No new matter has been added.

§102 Rejections

Claims 4, 13, 14, 18, and 25-26 were rejected under 35 U.S.C. §102(b) as being anticipated by Zeuv (US 6,223,827). Applicants respectfully traverse this rejection.

Claims 4 and 18 have been amended to recite that the control the ratio of the mass flow rate of the liquid extinguishing agent to the mass flow rate of the pressurised gas towards such a value as to tend to produce a *constant* droplet size distribution in and for substantially the duration of the discharge. This feature is neither disclosed nor suggested by Zeuv. The teachings of Zeuv at column 3, line 66 to column 4, line 3 disclose only that the apparatus of Zeuv is capable of producing a predetermined droplet size using a constant air pressure during substantially the duration of the discharge.

Zeuv discloses at column 3, lines 7-13 that:

compressed air under pressure of 300 Bar is supplied (Figure 1) from the gas bottle 2 through the pressure regulator 3 (gas reduction valve), to ensure a preset pressure level, through the hose 7 into the plenum of the vessel 1 contained water, the gas pressure is 6 Bar) and is then fed to the mixing chamber 8 (the gas pressure is 5 Bar) through the flexible hose 5 through the gas supply device 10.

Accordingly, throughout the majority of the operation time of the apparatus of Zeuv, the water in the liquid vessel 1 is maintained at a constant pressure of 6 Bar. In view of the fact that the water in the liquid vessel 1 is maintained at a constant pressure, it can be assumed that the mass flow ration of the water from the liquid vessel 1 through the flexible hose 5 to the nozzle 4 remains substantially constant. Zeuv also discloses with reference to Figure 1 that the flexible hose 6 that supplies pressurised gas to the nozzle 4 is located downstream of the gas pressure regulator 3. At least for the majority of the operating time of the Zeuv apparatus, the pressure of gas applied from the gas cylinder 2 to the nozzle 4 will also remain constant.

The Zeuv apparatus appears to be specifically adapted so that the constant mass flow rate of the liquid (as described above) and the constant pressure and subsequent mass flow rate of the gas (as described above) result in the preset droplet size discussed at column 4, line 1 of Zeuv. Accordingly, if in Zeuv, a desired droplet size distribution is obtained for substantially the duration of the discharge as recited by claim 4, this is achieved by utilizing a constant mass flow rate of the liquid in a constant pressure and mass flow rate of the gas.

Zeuv fails to disclose what would happen if the gas pressure falls below 6 Bar. Furthermore, there is no disclosure in Zeuv that dropping the gas pressure below 6 Bar could even occur while maintaining the specific outcome recited as the invention in Zeuv.

Even if the gas pressure in Zeuv did fall below 6 Bar along with a corresponding falling liquid pressure, which Applicants do not concede is disclosed, there is no disclosure by Zeuv that such conditions would control the ratio of the mass flow rate of the liquid extinguishing agent to the mass flow rate of the pressurised gas towards a value that produces a constant droplet sized distribution, as recited by claims 4 and 18. As discussed above, the system disclosed by Zeuv is adapted so that the desired preset droplet size is achieved by maintaining constant gas pressure and constant liquid pressure. Therefore, Applicants submit that Zeuv fails to disclose every limitation of claims 4 and 18 and the claims that depend from them.

Claims 3-5, 7, 9, 12-14, 17-19, 21, 22 and 24-26 were rejected under 35 U.S.C. §102(b) as being anticipated by Dorkin (US 6,478,240). Applicants respectfully traverse this rejection.

Dorkin fails to disclose the control features recited in claims 4, 5, 12, 18 and 19 wherein control the ratio of the mass flow rate of the liquid extinguishing agent to the mass flow rate of the pressurised gas toward a value that produces a *constant* drop size distribution in and for substantially the duration of the discharge. Dorkin teaches with reference to Figures 1 and 2 a system that works in a similar way to the system of Zeuv described above. Specifically, the gas regulator 18 of Dorkin maintains the constant gas pressure that is used both to feed gas via the supply pipe 11 into the gas chamber 8, and also to supply gas via the conduit 17 into the liquid container 16 so as to pressurise the liquid. Additionally, column 9, lines 38-40 of Dorkin suggest that the gas pressure at the nozzle inlet P is maintained constant. Dorkin fails to disclose in any way applying a reducing gas pressure to the liquid so that the mass flow rate of the liquid correspondingly reduces to produce a constant droplet sized distribution in and for substantially

the duration of the discharge. Dorkin seems to disclose that the gas pressure, the gas flow rate, and the liquid flow rate are all maintained constant by the gas regulator 18. Thus, Dorkin fails to disclose every limitation of claims 4, 5, 12, 18 and 19, and the claims that depend from them.

§103 Rejections

Claims 30 and 31 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dorkin in view of Russwurn (US 6,173,790). Applicants respectfully traverse this rejection. As discussed above, Dorkin fails to disclose or suggest every limitation of claims 4 and 18. Russwurn fails to remedy the deficiencies of Dorkin as it relates to claims 4 and 18. Therefore, claims 30 and 31 are allowable for at least the reason they are dependent upon an allowable base claim. Applicants do not otherwise concede the correctness of this rejection.

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance. If a phone conference would be helpful in resolving any further issues related to this matter, please contact Applicants' attorney listed below at (612) 371.5387.

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